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ABSTRACT

University students enrolled in a social studies methods course improved their critical thinking ability by engaging in specific thinking activities and by teaching critical thinking skills lessons to secondary school students. The program utilized was called Improve Minimal Proficiencies by Activating Critical Thinking (IMPACT). Key elements of the program included a universe of 22 critical thinking skills, 10 teaching behaviors, and a lesson plan format. The 22 skills were grouped into three major categories: (1) the enabling skills of perceiving, conceiving, and seriating; (2) the process skills of analyzing, questioning, and inferring; and (3) the operations skills of logical reasoning and evaluation. The effectiveness of the IMPACT program was evaluated by giving the student teachers who applied it as well as to a non-participating control group the Cornell Critical Thinking Test, Level Z. The IMPACT group performed better than the other group on a posttest. One figure and one table are included along with 14 references. (LBG)

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Improving the Critical Thinking Ability of Preservice Social Studies Teachers

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Abstract

University students enrolled in a social studies methods course improved their critical thinking ability by engaging in specific thinking activities and by teaching critical thinking skills lessons to secondary school students.

Improving Critical Thinking Ability of Preservice Social Studies Teachers

The need for American elementary and secondary students to learn higher order critical thinking skills has been recognized widely by leaders in government, education, and business. In 1990, President Bush and the nation's governors included among their six goals for the year 2000, ensuring "that all students learn to use their minds well" (Phi Delta Kappa, 1991). Professional educators' groups have long encouraged this development of the intellect (Cornbleth, 1985) and the economic and environmental pressures of this decade have increased the calls of corporations and the public for a creative and thoughtful workforce (Costa, 1991).

Having recognized the need to enhance students' thinking abilities through efforts provided by the nation's schools, how can we best prepare teachers to facilitate this important process? As teacher educators, several indicators lead us toward answers to this question. The case has been made for classroom instruction in thinking skills which is direct and is practiced in all academic disciplines (Beyer, 1987). Furthermore, training in teaching thinking skills typically has occurred at the inservice level, seldom at the preservice stage (Martin, 1991). Additionally, we know that teachers need not only intellectual understanding of skills, but also opportunities to implement them

(Kennedy, 1991). It is time, then, to address critical thinking skill instruction in the teacher preparation program.

Critical thinking skills are acquired through a developmental process. The ability to think critically is a never-ending process and, as with many skill areas, to become a proficient critical thinker, an individual must practice the skills of critical thinking. Therefore, teachers must model critical thinking for students and provide numerous opportunities for students to engage in critical thinking. We believe this is as true of teacher training classrooms as of elementary and secondary ones.

This article provides a description of attempts to infuse critical thinking skills into the preservice preparation program for secondary social studies teachers at the University of Nebraska-Lincoln. The effects of these attempts were measured against a comparison group of secondary mathematics methods students through the use of a standardized test designed to measure critical thinking abilities. The efforts to infuse thinking skills into the teacher preparation program were based upon two assumptions: (a) teachers and those desiring to become teachers should continually improve their own skills as critical thinkers (Eulie, 1988); (b) pre-service teachers will display growth in critical thinking ability if they engage in critical thinking skill activities themselves and if they teach lessons to secondary school students which have been designed to meet social studies content objectives as

well as to promote the development of critical thinking abilities (Newman, 1990; Onosko, 1989).

Preservice Preparation of Secondary Teachers

Consistent with the National Council for the Social Studies Standards for the Preparation of Social Studies Teachers (1988), secondary social studies preservice teachers at the University of Nebraska-Lincoln engage in a professional preparation semester prior to student teaching. This semester includes a professional social studies methods course with an accompanying practicum experience. Those enrolled attend the methods class three days a week for one hour and 50 minutes during a 15-week semester. Simultaneously they engage in a practicum experience under the supervision of a junior or senior high school social studies teacher. The duration of the practicum experience is ten weeks, Monday through Friday, for two 50-minute periods each day.

A primary goal of the professional social studies methods course is to help students blend their background in social science courses with acceptable teaching practices. A major requirement of the course is the development of a ten-lesson unit of instruction which is taught in the practicum setting. Students are provided with an opportunity to reflect on their development as a teacher through conference with and feedback from the methods course instructor, the practicum

cooperating teacher, and self and peer analysis of videotapes of their teaching in the practicum setting.

The development of the unit plan begins with the assignment of a topic by the cooperating teacher. The methods student then must identify specific affective and cognitive objectives related to the content and develop lessons which will address these objectives. Additionally, the methods instructor requires that a critical thinking skill be developed and utilized as a part of each lesson.

As the unit plans are being developed and taught in the practicum setting, ongoing class activities in the methods class encourage critical thinking. Opportunities through methods class lessons are provided for the methods students to improve their own critical thinking ability. Additionally, the methods group considers various ways that these skills can be developed and practiced in the secondary school settings .

Students in the professional secondary mathematics methods course have a similar experience to those in social studies. Math students are required to complete a unit plan which they teach during the last six weeks of the methods course under the supervision of a junior high school teacher. The methods students create the plan in groups of three. Methods students are in the practicum classroom for three and one-half hours each day Monday through Friday. They are provided the opportunity to reflect on their teaching by viewing themselves on videotape and are evaluated and provided feedback by

both the cooperating teacher and the methods instructors. It appears that the experiences provided in the two methods courses, mathematics and social studies, then, are very similar with the exception of the overt teaching and emphasis upon critical thinking skills.

The Integration of Critical Thinking Skills

During the social studies methods classes, several activities are conducted to help students understand the nature of critical thinking in general and how specific skills can be promoted in secondary social studies classes. The operative definition used is: "Critical thinking is reasonable, reflective thinking that is focused on deciding what to believe or do" (Ennis, Millman, & Tomko, 1985).

To promote critical thinking skills, the program utilized is Improve Minimal Proficiencies by Activating Critical Thinking (IMPACT). IMPACT is a program developed in 1979 by Dr. Lee Winocur. As a result of strong validation, the program is included in the National Diffusion Network of the United States Department of Education. The program has been designed to be infused in the regular ongoing curriculum of a school. Key elements of the program include a universe of 22 critical thinking skills, ten teaching behaviors, and a lesson plan format. The 22 IMPACT skills are grouped into three major categories: (a) the enabling skills of perceiving, conceiving and seriating; (b) the process skills of analyzing, questioning, and inferring;

and (c) the operations skills of logical reasoning and evaluation. The importance of specific teaching behaviors in helping students develop critical thinking skill ability is emphasized, including cooperative learning, wait time, higher level questioning, use of graphic organizers, and transfer of learning. The lesson plan format is very similar to the Hunter model and includes anticipatory set, guided practice, and closure.

Once methods students are comfortable and familiar with the definition of critical thinking and with the skills and teacher behaviors involved, they plan their instructional units. Each of the lessons in the unit is to promote a specific critical thinking skill. The lessons are then taught and videotaped in the practicum setting. Reflection is provided by viewing of the videotapes and discussions in the methods class with particular attention given to feelings about successes and identifying areas needing improvement.

Preservice Students' Growth in Critical Thinking Ability

To evaluate the effectiveness of the infusion of critical thinking skills in the preservice social studies methods course, a quasi-experimental design was employed. The Cornell Critical Thinking Test, Level Z, was administered at the beginning and again at the end of the semester. The comparison group of 27 students in the professional mathematics methods course was administered the same tests at the same times.

Insert Table 1 About Here

Descriptive statistics of the data are shown in Table 1. A post hoc analysis of the data using paired T-tests revealed that the mathematics students had a higher, although not significantly higher, mean score on the pretest. The social studies methods students, however, obtained a higher mean score on the posttest, although again the between-groups difference was not significant (see Figure 1). An analysis of the gains for both groups showed that while the improvement in mean scores between pretest and posttest was not significant for the mathematics methods students, the gain was significant for the social studies methods group ($p < .024$).

Insert Figure 1 About Here

This gain in mean score likely can be attributed to the social studies methods students' involvement with an explicit critical thinking skills development program. While the social studies preservice teachers were exposed to the IMPACT program and were directed to infuse critical thinking skills into their practicum lesson plans, the mathematics preservice teachers were not.

Summary

Through use of a standardized test designed to measure critical thinking ability, it was shown that students in a social studies methods course improved their critical thinking ability by engaging in activities designed to enhance ability in critical thinking. If more preservice programs for secondary social studies teachers include such experiences, then, some of the impediments to implementing critical thinking in schools (McKee, 1988) may be overcome. Also, several of the essentials of the social studies identified by the NCSS (1980), such as "dealing with critical issues" and "preparing students to make decisions" will be ensured. The final result of these efforts will be displayed in opportunities for secondary school students to practice and develop critical thinking skills as an ongoing part of the educational experiences provided in social studies classrooms.

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Table 1

Improvement in Mean Scores

Cornell Critical Thinking Test Level Z

	PreTest Mean Score	Post Test Mean Score	Gain in Mean Score	t Value
Social Studies	31.27	33.27	2.00	2.10*
Mathematics	31.67	32.78	1.11	1.16

*p <.024 (one-tail)

Figure Caption

Figure 1. Gains in critical thinking.